

From the 12th to the 16th heavy snowstorms occurred in the middle Rocky Mountain districts, and from the 19th to the 23d snow fell in the mountains of eastern Tennessee, eastern Kentucky, Virginia, West Virginia, and Pennsylvania.

Frequent damaging frosts in the North Pacific States, were, as a rule, accurately forecast. In the central and northern counties of California fruit was damaged by cold, dry weather.

#### CHICAGO FORECAST DISTRICT.

Advisory messages were sent to open ports on the upper Lakes on the 1st and 4th, and to Lake Michigan and Lake Huron ports on the 16th, to the effect that the wind would become brisk to high. On the 20th, 21st, and 22d warnings for high north to northeast winds were issued in connection with a condition seemingly dangerous to navigation, the condition being a storm of steep gradient entering from the British Northwest, while an area of high pressure and cold air overlay the Lake Superior region, and at the same time a severe storm was central on the middle Atlantic coast with a steep gradient extending northwest nearly to the lower lakes. Fresh to brisk northeast winds obtained generally over the upper lakes, and high northeast over Lake Michigan.

In anticipation of the unseasonably cool weather which overspread the district from the 16th to 19th, frost warnings were issued to such sections as would be liable to suffer injury by heavy frost or freezing weather.—*F. J. Walz, Forecast Official.*

#### SAN FRANCISCO FORECAST DISTRICT.

The month was as a whole unusually dry. This dry condition, it is believed, was largely brought about by the prevalence of an area of high pressure from British Columbia to Alberta.

Southeast storm warnings were displayed along the coast early on the morning of the 29th. While not technically justified at the most southern points of display, it is believed that reports from incoming vessels will show that the conditions at sea were such as accompany a moderate southeaster.—*A. G. McAdie, Forecast Official.*

#### PORTLAND, OREG., FORECAST DISTRICT.

The month was unusually cool and damaging frosts occurred frequently. The frosts were as a rule accurately forecast. No damaging storms occurred inland, but several were reported along the coast, the more severe of which took place on the 1st and 28th. Storm warnings were ordered hoisted at stations nearest the coast in advance of both of these storms, and information of their character sent to inland points.—*E. A. Beals, Forecast Official.*

#### HAVANA, CUBA, FORECAST DISTRICT.

But one warning was issued. This warning was received from Washington and was worded as follows:

WASHINGTON, D. C., April 18, 1901, 11 a. m.

Storm center near Mobile moving east; Strong east to southeast winds will shift to-night to northwest on north Cuban coast with lower temperature.

This warning was sent to all Cuban north coast stations and to Santiago, and was very fully disseminated. It was fully verified and much appreciated, for, although the registered wind velocity did not exceed 28 miles an hour, very high

seas continued during the 19th, 20th, and 21st. The forecast was highly commented on for its accuracy by the governor general, the captain of the port, and a number of prominent army officers at the governor general palace, the governor general having been prevented from taking a trip in his steam yacht to Miami en route to Washington by the high seas running. A number of expressions of the value of the warning were received from agents of steamship companies.—*W. B. Stockman, Forecast Official.*

#### AREAS OF HIGH AND LOW PRESSURE.

*Movements of centers of areas of high and low pressure.*

Number.	First observed.			Last observed.			Path.		Average velocities.	
	Date.	Lat. N.	Long. W.	Date.	Lat. N.	Long. W.	Length.	Duration.	Daily.	Hourly.
<b>High areas.</b>										
I.....	2, a. m.	32	107	3, p. m.	37	87	1,300	1.5	867	36.1
II.....	4, a. m.	38	123	6, p. m.	39	95	1,550	2.5	630	25.8
III.....	5, p. m.	50	97	13, p. m.	41	70	3,150	5.0*	630	26.2
IV.....	6, p. m.	40	124	13, p. m.	50	97	1,650	2.5†	660	27.5
V.....	12, a. m.	53	123	23, p. m.	50	97	875	1.5	589	24.3
	25, p. m.	40	124	29, p. m.	39	75	3,075	4.0	769	32.0
Sums.....							11,600	17.0	4,129	171.9
Mean of 6 paths.....							1,933		688	28.7
Mean of 17 days.....									683	28.4
<b>Low areas.</b>										
I.....	1, a. m.	53	122	4, a. m.	50	100	1,400	2.0*	700	29.2
II.....	3, p. m.	41	105	7, a. m.	41	70	2,950	3.5	843	35.1
III.....	4, a. m.	49	123	6, p. m.	37	75	2,900	2.7	1,074	44.8
IV.....	9, p. m.	32	107	7, a. m.	53	105	1,075	2.0*	538	32.4
V.....	13, a. m.	37	90	13, a. m.	37	90	1,465	3.5	419	17.5
VI.....	15, p. m.	38	100	16, p. m.	32	65	3,900	6.0*	650	27.1
VII.....	16, p. m.	32	107	17, a. m.	48	85	1,100	1.5	733	30.5
VIII.....	22, a. m.	49	123	22, a. m.	39	85	2,750	5.5	500	20.8
	25, a. m.	49	123	24, a. m.	53	105	925	2.0	462	19.2
	22, p. m.	32	86	25, a. m.	41	70	1,250	2.5	500	20.8
Sums.....							19,715	31.2	6,419	267.4
Mean of 10 paths.....							1,972		642	26.7
Mean of 31.2 days.....									632	26.3

\* Stationary for 1 day. † Stationary for 3 days.

#### RIVERS AND FLOODS.

Two floods in the Ohio River, one of them almost unprecedented for the season, were the principal occurrences of interest during the month. The first rise, which resulted from heavy rains over the watersheds and valleys of the Allegheny and Monongahela rivers, began on the 3d, and on the 8th the water reached the danger line at Pittsburg, Pa. The decline of this flood at Pittsburg was as rapid as had been its rise, and the danger stage was maintained less than a day. As the crest passed down the river, high readings were reported from all points between Pittsburg, Pa., and Cairo, Ill., but no damage resulted, and the danger line was not reached, except at the first named place. Concerning this flood the Weather Bureau Official at Pittsburg reports as follows:

PITTSBURG, PA., APRIL 23, 1901.

On the morning of the 3d instant a very heavy snowfall, from 12 to 15 inches, seriously crippled the telegraph and telephone communications, and practically no reports were received on the 3d, very few on the 4th, and they were generally delayed and unsatisfactory until the morning of the 7th instant, when Freeport and Lock No. 4, the two most important stations, were still missing. Owing to this state of affairs it was very difficult to keep track of the upper river conditions, and I had to surmise what the precipitation and fluctuations were on the Allegheny and Monongahela rivers for a distance of over 100 miles from Pittsburg. Meanwhile the rivers continued to rise slowly at Pittsburg, and on the morning of the 7th instant, reached a stage of 20.7 feet, 1.3 feet below the danger line. Considering the reports of the